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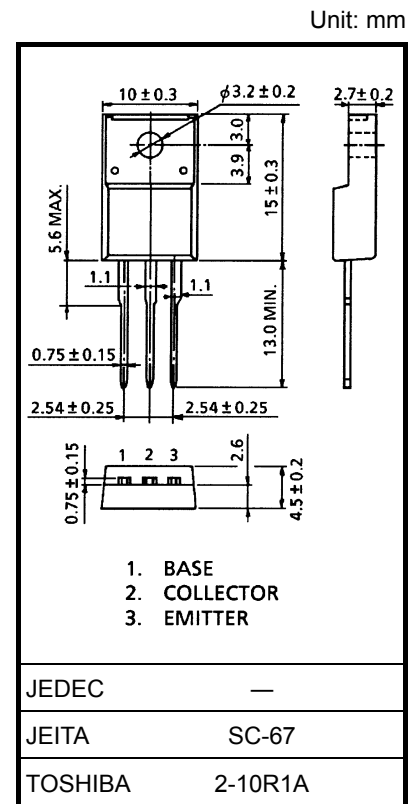
Switching Regulator and High-Voltage Switching Applications

High-Speed DC-DC Converter Applications

- Excellent switching times: $t_r = 0.5 \mu s$ (max),
 $t_f = 0.3 \mu s$ (max) at $I_C = 2 A$
- High collector breakdown voltage: $V_{CEO} = 400 V$

Absolute Maximum Ratings ($T_c = 25^\circ C$)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	600	V
Collector-emitter voltage		V_{CEO}	400	V
Emitter-base voltage		V_{EBO}	7	V
Collector current	DC	I_C	5	A
	Pulse	I_{CP}	7	
Base current		I_B	2	A
Collector power dissipation	$T_a = 25^\circ C$	P_C	2.0	W
	$T_c = 25^\circ C$		25	
Junction temperature		T_j	150	$^\circ C$
Storage temperature range		T_{stg}	-55 to 150	$^\circ C$

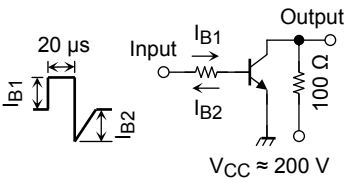


Weight: 1.7 g (typ.)

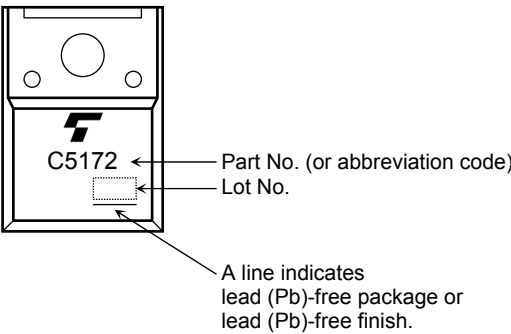
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

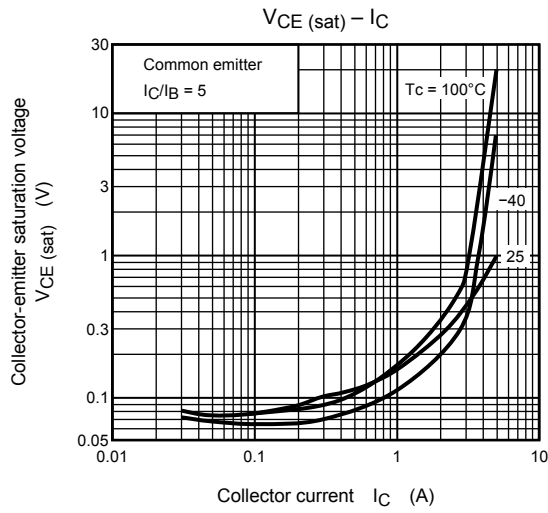
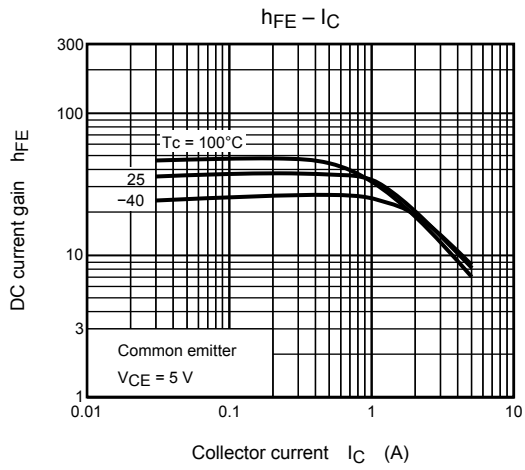
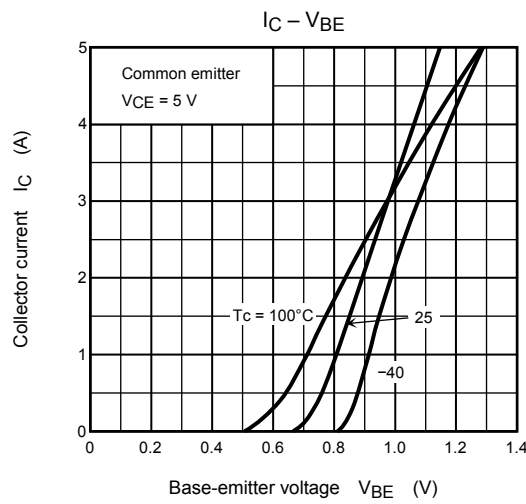
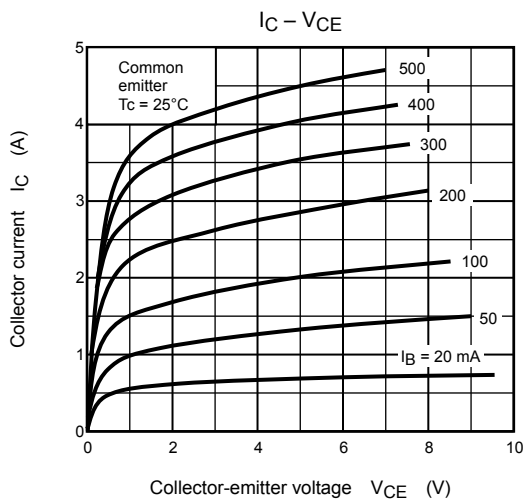
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

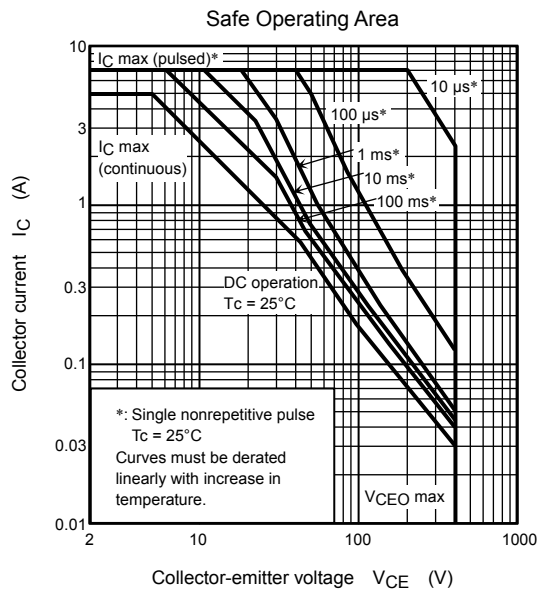
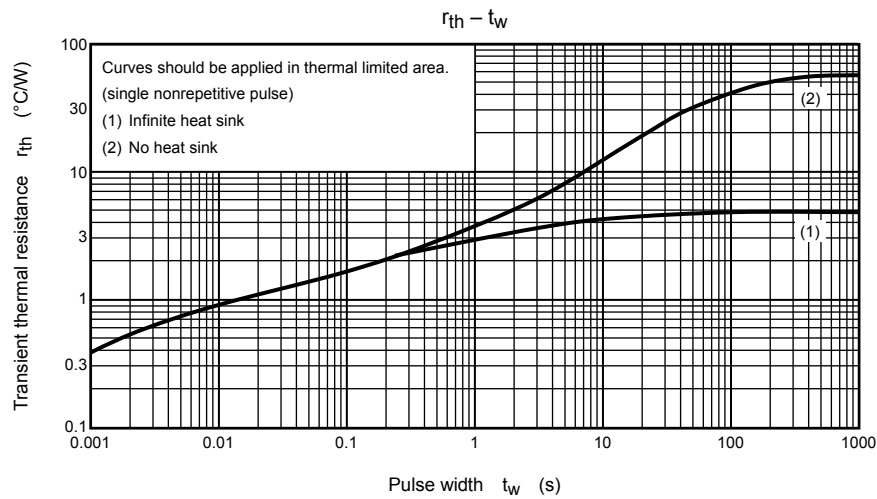
Electrical Characteristics (Tc = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		ICBO	V _{CB} = 500 V, I _E = 0	—	—	20	μA
Emitter cut-off current		IEBO	V _{EB} = 7 V, I _C = 0	—	—	100	nA
Collector-base breakdown voltage		V (BR) CBO	I _C = 1 mA, I _E = 0	600	—	—	V
Collector-emitter breakdown voltage		V (BR) CEO	I _C = 10 mA, I _B = 0	400	—	—	V
DC current gain	h _{FE} (1)		V _{CE} = 5 V, I _C = 1 mA	13	—	—	
	h _{FE} (2)		V _{CE} = 5 V, I _C = 0.5 A	20	—	65	
Collector-emitter saturation voltage		V _{CE} (sat)	I _C = 2 A, I _B = 0.25 A	—	—	1.0	V
Base-emitter saturation voltage		V _{BE} (sat)	I _C = 2 A, I _B = 0.25 A	—	—	1.3	V
Switching time	Rise time	t _r	 I _{B1} = 0.25 A, I _{B2} = -0.5 A, duty cycle < 1%	—	—	0.5	μs
	Storage time	t _{stg}		—	—	2.0	
	Fall time	t _f		—	—	0.3	

Marking







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